Abstract

The transceiver according to the invention is a transmitting and receiving device for the transmission of digital signal sequences. Chirp signals are used for signal transmission by way of the air interface, such signals making it possible for the BT-product in the transmission band to be very much greater than the BT-product in the baseband by simultaneous frequency and time spreading.

The transmitting and receiving device is distinguished in that chirp signals which are different in respect of the BT-product and/or the time-frequency characteristic can be stored in a memory in order for them to be selectively called up and raised into the transmission frequency band by direct upward conversion. No mirror frequency bands are produced with this procedure so that complicated band pass filters in the carrier frequency position can be eliminated.

Direct and automatic demodulation into the baseband is also possible in the receiver, being dependent on the feasibility of the asynchronously operating dispersive filters (for example in the form of SAW components) for the carrier frequency band.

As the dispersive SAW filters which can be produced at the present time in the microwave field are still of excessively low efficiency, the invention set forth herein describes receiver structures which presuppose an IF part, in which structures therefore compression of the received chirp signals is effected in the IF position.

The compressed chirp signals can then be asynchronously demodulated into the baseband by rectification or, when using convolution pulses, by multiplication.

The transmitting and receiving device according to the invention is distinguished by remarkable robustness and resistance in relation to narrow-band and wide-band interference signals.

The overall system belongs to the class of matched filter systems.